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10/576,299

04/19/2006

Motoshige Sumino

WKP-003

4456

20374 7590 12/04/2007

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WASHINGTON, DC 20006

EXAMINER

NWAONICHA, CHUKWUMA O

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

12/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,299

Applicant(s)

SUMINO ET AL.

Examiner

Chukwuma O. Nwaonicha

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 22 October 2007.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 1-10 are pending in the application.
4. The 103 rejection has been withdrawn because the prior art references cited do not teach all the claim limitations.

Specification

The abstract of the disclosure is objected to because of the phrase "arobatic rings". The Examiner believes that Applicants intend to write aromatic rings.

Correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oono et al., {US 6,723,483} in view of Osawa et al., {US 5,824,824}.

Applicants claim a method for producing a triarylsulfonium salt represented by the general formula 1 by reacting a diaryl sulfoxide and an aryl Grignard reagent (RMgX) in the presence of an activator with high affinity for oxygen of 3 to 7.5 equivalents relative to the diaryl sulfoxide and then reacting the resultant reaction mixture with a strong acid (HA); wherein all the variables are as defined in the claims

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Oono et al. teach a method for producing a triarylsulfonium salt (scheme 1) by reacting a diaryl sulfoxide and an aryl Grignard reagent (RMgX) in the presence of an activator at a level of 0.8- 2 mole parts relative to the diaryl sulfoxide followed by the reaction with a strong acid to give a high yield of the product.

Ascertainment of the difference between the prior art and the claims (M.P.E.P. §2141.02)

Oono et al. process for producing a triarylsulfonium salt differs from the instantly claimed method in that applicants' process specifically employ an activator with high affinity for oxygen of 3 to 7.5 equivalents relative to the diaryl sulfoxide while Oono et al. teach a method that employed an activator at a level of 0.8- 2 mole parts relative to the diaryl sulfoxide. See columns 9-11.

However, the secondary reference of Osawa et al. teaches a process that employed an activator at a level of 1- 5 mole relative to the diaryl sulfoxide.. Specifically, Osawa et al. teach a process for preparing a triarylsulfonium salt comprising reacting a diaryl sulfoxide and an aryl Grignard reagent (RMgX) in the presence of an acid and then reacting the resultant reaction mixture with a strong acid See columns 10 and 12.

Finding of prima facie obviousness--rational and motivation (M.P.E.P. §2142-2143)

The instantly claimed method for producing a triarylsulfonium salt would have been suggested to one of ordinary skill because one of ordinary skill wishing to obtain triarylsulfonium salt is taught to employ the processes of Oono et al. and Osawa et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the reactants from the teachings of Oono et al. and Osawa et al. to arrive at the instantly claimed process for preparing triarylsulfonium salt. Said person would have been motivated to practice the teaching of the references cited because they demonstrate that triarylsulfonium salt are useful in industrial applications. The Examiner notes that modification of a process is a well-known chemical practice to optimize the process efficiency of the system and does not constitute a patentable distinction.

Moreover, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in

their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. The instantly claimed invention would therefore have been obvious to one of ordinary skill in the art.

No Claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne (Bonnie) Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chukwuma O. Nwaonicha, Ph.D.
Patent Examiner
Art Unit: 1621

Application/Control Number:
10/576,299
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